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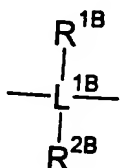
AMENDMENTS TO THE CLAIMS

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1. (original) A monocyclopentadienyl complex which comprises the structural feature of the formula $(\text{Cp})(-\text{Z}-\text{A})_m\text{M}$ (I), where the variables have the following meanings:

Cp is a cyclopentadienyl system,

Z is a bridge between A and Cp of the formula,



where

$\text{L}^{1\text{B}}$ are each, independently of one another, carbon or silicon,

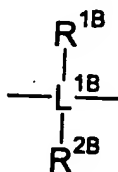
$\text{R}^{1\text{B}}, \text{R}^{2\text{B}}$ are each, independently of one another hydrogen, $\text{C}_1\text{-C}_{20}$ -alkyl, $\text{C}_2\text{-C}_{20}$ -alkenyl, $\text{C}_6\text{-C}_{20}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or $\text{SiR}^{3\text{B}}_3$, where the organic radical $\text{R}^{1\text{B}}$ and $\text{R}^{2\text{B}}$ may also be substituted by halogens and the two radicals $\text{R}^{1\text{B}}$ and $\text{R}^{2\text{B}}$ and/or $\text{R}^{1\text{B}}$ and $\text{R}^{2\text{B}}$ and A may also be joined to form a five- or six-membered ring,

$\text{R}^{3\text{B}}$ are each, independently of one another, hydrogen, $\text{C}_1\text{-C}_{20}$ -alkyl, $\text{C}_2\text{-C}_{20}$ -alkenyl, $\text{C}_6\text{-C}_{20}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals $\text{R}^{3\text{B}}$ may also be joined to form a five- or six-membered ring,

- A is an unsubstituted, substituted or fused, five-membered heteroaromatic ring system,
- M is a metal selected from the group consisting of titanium in the oxidation state 3, vanadium, chromium, molybdenum and tungsten and
- m is 1, 2 or 3.

2. (original) A monocyclopentadienyl complex as claimed in claim 1 having the formula $(\text{Cp})-(\text{-Z-A})_m\text{MX}_k$ (VI), where the variables have the following meanings:

- Cp is a cyclopentadienyl system,
- Z is a bridge between A and Cp of the formula,



where

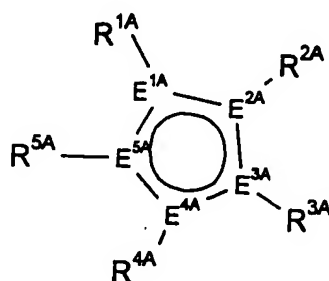
- $\text{L}^{1\text{B}}$ are each, independently of one another, carbon or silicon,
- $\text{R}^{1\text{B}}, \text{R}^{2\text{B}}$ are each, independently of one another hydrogen, $\text{C}_1\text{-C}_{20}$ -alkyl, $\text{C}_2\text{-C}_{20}$ -alkenyl, $\text{C}_6\text{-C}_{20}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or $\text{SiR}^{3\text{B}}_3$, where the organic radical $\text{R}^{1\text{B}}$ and $\text{R}^{2\text{B}}$ may also be substituted by halogens and the two radicals $\text{R}^{1\text{B}}$ and $\text{R}^{2\text{B}}$ and/or $\text{R}^{1\text{B}}$ and $\text{R}^{2\text{B}}$ and A may also be joined to form a five- or six-

- membered ring,
- R^{3B} are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals R^{3B} may also be joined to form a five- or six-membered ring,
- A is an unsubstituted, substituted or fused, five-membered heteroaromatic ring system,
- M is a metal selected from the group consisting of titanium in the oxidation state 3, vanadium, chromium, molybdenum and tungsten,
- m is 1, 2 or 3,
- X are each, independently of one another, fluorine, chlorine, bromine, iodine, hydrogen, C_1 - C_{10} -alkyl, C_2 - C_{10} -alkenyl, C_6 - C_{20} -aryl, alkylaryl having 1-10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part, NR^1R^2 , OR^1 , SR^1 , SO_3R^1 , $OC(O)R^1$, CN, SCN, β -diketonate, CO, BF_4^- , PF_6^- or a bulky noncoordinating anion,
- R^1 - R^2 are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or SiR^3_3 , where the organic radicals R^1 - R^2 may also be substituted by halogens and two radicals R^1 - R^2 may also be joined to form a five- or six-membered ring,
- R^3 are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20

carbon atoms in the aryl part and two radicals R^3 may also be joined to form a five- or six-membered ring and

k is 1, 2, or 3.

3. (currently amended) ~~A~~ The monocyclopentadienyl complex ~~as claimed in~~ of claim 1 ~~or~~ 2, wherein the cyclopentadienyl system Cp has the formula (II):

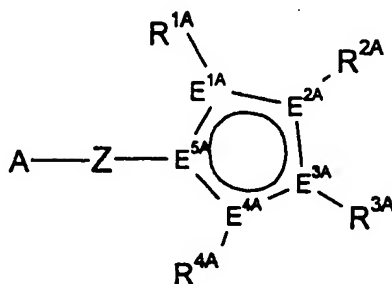


where the variables have the following meanings:

- $E^{1A}-E^{5A}$ are each carbon or not more than one E^{1A} to E^{5A} is phosphorus,
- $R^{1A}-R^{5A}$ are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part, NR^{6A}_2 , $N(SiR^{6A}_3)_2$, OR^{6A} , $OSiR^{6A}_3$, SiR^{6A}_3 , BR^{6A}_2 , where the organic radicals $R^{1A}-R^{5A}$ may also be substituted by halogens and two vicinal radicals $R^{1A}-R^{5A}$ may also be joined to form a five- or six-membered ring, and/or two vicinal radicals $R^{1A}-R^{5A}$ are joined to form a heterocycle which contains at least one atom from the group consisting of N, P, O and S, with 1, 2 or 3 substituents $R^{1A}-R^{5A}$ each being a -Z-A group and
- R^{6A} are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -

alkenyl, C₆-C₂₀-aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two geminal radicals R^{6A} may also be joined to form a five- or six-membered ring.

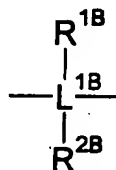
4. (currently amended) A The monocyclopentadienyl complex as claimed in any of claims 1 to 3 of claim 1, wherein the cyclopentadienyl system Cp together with -Z-A has the formula (IV):



where the variables have the following meanings:

- E^{1A}-E^{5A} are each carbon or not more than one E^{1A} to E^{5A} is phosphorus,
- R^{1A}-R^{4A} are each, independently of one another, hydrogen, C₁-C₂₀-alkyl, C₂-C₂₀-alkenyl, C₆-C₂₀-aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part, NR^{6A}₂, N(SiR^{6A}₃)₂, OR^{6A}, OSiR^{6A}₃, SiR^{6A}₃, where the organic radicals R^{1A}-R^{4A} may also be substituted by halogens and two vicinal radicals R^{1A}-R^{4A} may also be joined to form a five- or six-membered ring, and/or two vicinal radicals R^{1A}-R^{4A} are joined to form a heterocycle which contains at least one atom from the group consisting of N, P, O and S,
- R^{6A} are each, independently of one another, hydrogen, C₁-C₂₀-alkyl, C₂-C₂₀-

alkenyl, C₆-C₂₀-aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two geminal radicals R^{6A} may also be joined to form a five- or six-membered ring,
Z is a bridge between A and Cp of the formula,



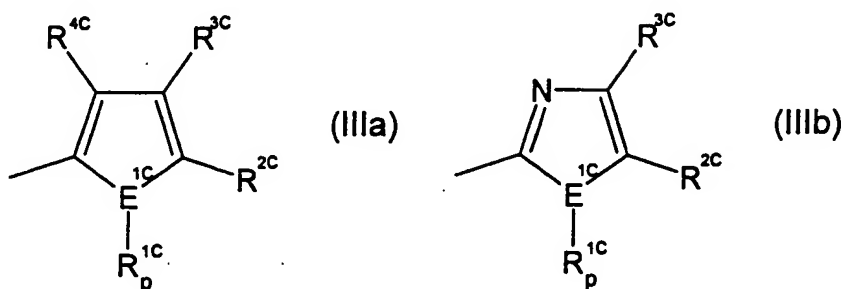
where

L^{1B} are each, independently of one another, carbon or silicon,
R^{1B}, R^{2B} are each, independently of one another hydrogen, C₁-C₂₀-alkyl, C₂-C₂₀-alkenyl, C₆-C₂₀-aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or SiR^{3B}₃, where the organic radical R^{1B} and R^{2B} may also be substituted by halogens and the two radicals R^{1B} and R^{2B} and/or R^{1B} and R^{2B} A may also be joined to form a five- or six-membered ring,

R^{3B} are each, independently of one another hydrogen, C₁-C₂₀-alkyl, C₂-C₂₀-alkenyl, C₆-C₂₀-aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals R^{3B} may also be joined to form a five- or six-membered ring,

A is an unsubstituted, substituted or fused, five-membered heteroaromatic ring system.

5. (currently amended) A The monocyclopentadienyl complex as claimed in any of claims 1 to 4 of claim 1, wherein A has the formula (IIIa) or (IIIb):



where

E^{1C} is nitrogen, phosphorus, sulfur or oxygen,

R^{1C} - R^{4C} are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or SiR^{5C}_3 , where the organic radicals R^{1C} - R^{4C} may also be substituted by halogens or nitrogen or further C_1 - C_{20} -alkyl groups, C_2 - C_{20} -alkenyl groups, C_6 - C_{20} -aryl groups, alkylaryl groups having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or SiR^{5C}_3 and two vicinal radicals R^{1C} - R^{4C} or the two radicals R^{1C} or R^{4C} and Z may also be joined to form a five- or six-membered ring,

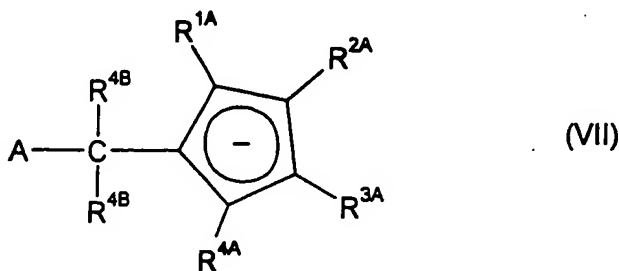
R^{5C} are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{20} -aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals R^{5C} may also be joined to form a five- or six-membered ring and

p is 0 when E^{1C} is sulfur or oxygen and is 1 when E^{1C} is nitrogen or

phosphorus.

6. (currently amended) A The monocyclopentadienyl complex as ~~claimed in any of claims 1 to 5 of claim 1~~, wherein L^{1B} is carbon.
7. (currently amended) A The monocyclopentadienyl complex as ~~claimed in any of claims 1 to 6 of claim 1~~, wherein Z is -CH₂-, C(CH₃)₂-, CH(C₆H₅)- or -C(C₆H₅)₂-.
8. (currently amended) A catalyst system for olefin polymerization comprising
 - A) at least one monocyclopentadienyl complex as ~~claimed~~ defined in ~~any of claims 1 to 7 claim 1~~,
 - B) optionally an organic or inorganic support,
 - C) optionally one or more activating compounds,
 - D) optionally one or more catalysts suitable for olefin polymerization and
 - E) optionally one or more metal compounds containing a metal of group 1, 2 or 13 of the Periodic Table.
9. (original) A prepolymerized catalyst system as claimed in claim 8 and one or more linear C₂-C₁₀-1-alkenes polymerized onto it in a mass ratio of from 1:0.1 to 1:1 000, based on the catalyst system.
10. (currently amended) The use of a catalyst system as claimed in claim 8 ~~or 9~~ for the polymerization or copolymerization of olefins.

11. (currently amended) A process for preparing polyolefins by polymerization or copolymerization of olefins in the presence of a catalyst system as claimed in claim 8 or 9.
12. (original) A process for preparing cyclopentadienyl system anions of the formula (VII),



where the variables have the following meanings:

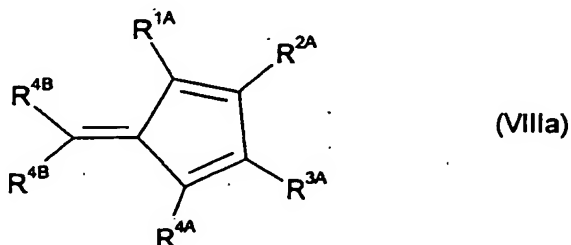
- $R^{1A}-R^{4A}$ are each, independently of one another, hydrogen C_1-C_{20} -alkyl, C_2-C_{20} -alkenyl C_6-C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part, NR^{6A}_2 , $N(SiR^{6A}_3)_2$, OR^{6A} , $OSiR^{6A}_3$, SiR^{6A}_3 where the organic radicals $R^{1A}-R^{4A}$ may also be substituted by halogens and two vicinal radicals $R^{1A}-R^{4A}$ may also be joined to form a five- or six-membered ring, and/or two vicinal radicals $R^{1A}-R^{4A}$ are joined to form a heterocycle which contains at least one atom from the group consisting of N, P, O and S,
- R^{6A} are each, independently of one another, hydrogen, C_1-C_{20} -alkyl, C_2-C_{20} -alkenyl C_6-C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two geminal radicals R^{6A} may also be joined to form a five- or six-membered ring,
- A is an unsubstituted, substituted or fused, heteroaromatic 5-membered ring system,
- R^{4B} are each, independently of one another, hydrogen, C_1-C_{20} -alkyl, C_2-C_{20} -alkenyl,

R^{4B} are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or SiR^{3B}_3 , where the organic radicals R^{4B} may also be substituted by halogens and two geminal or vicinal radicals R^{4B} may also be joined to form a five- or six-membered ring and

R^{3B} are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{20} -aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals R^{3B} may also be joined to form a five- or six-membered ring,

which comprises the step a) or a'), where,

in step a), an A^- anion is reacted with a fulvene of the formula (VIIIa)



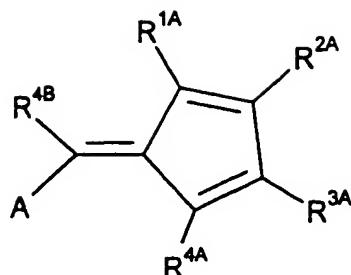
or,

in a step a'), an organometallic compound $R^{4B}M^BX^b$, where

M^B is a metal of group 1 or 2 of the Periodic Table of the Elements,

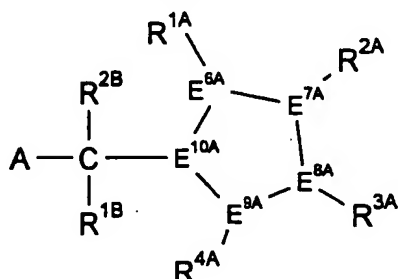
X^B is halogen, C_1 - C_{10} -alkyl, alkoxy having from 1 to 20 carbon atoms in the alkyl part and/or from 6 to 20 carbon atoms in the aryl part, or R^{4B} and,

b is 0 when M^B is a metal of group 1 of the Periodic Table of the Elements and is 1 when M^B is a metal of group 2 of the Periodic Table of the Elements, is reacted with a fulvene of the formula (VIIIb):



(VIIIb)

13. (original) A process for preparing cyclopentadiene systems of the formula (VIIa)



(VIIa)

where the variables have the following meanings:

$E^{6A}-E^{10A}$ are each carbon, where in each case four adjacent $E^{6A}-E^{10A}$ form a conjugated diene system and the remaining $E^{6A}-E^{10A}$ additionally bears a hydrogen atom,

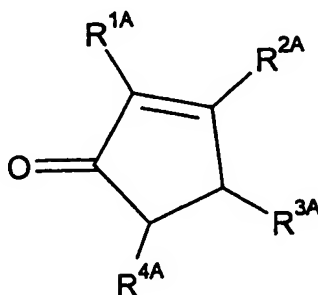
$R^{1A}-R^{4A}$ are each, independently of one another, hydrogen, C_1-C_{20} -alkyl, C_2-C_{20} -alkenyl, C_6-C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part, NR^{6A}_2 , $N(SiR^{6A}_3)_2$, OR^{6A} , $OSiR^{6A}_3$, SiR^{6A}_3 , where the organic radicals $R^{1A}-R^{4A}$ may also be substituted by halogens and two vicinal radicals $R^{1A}-R^{4A}$ may also be joined to form a five- or six-membered ring, and/or two vicinal radicals $R^{1A}-R^{4A}$ are joined to form a heterocycle which contains at least one atom from the group consisting of N, P, O and S,

R^{6A} are each, independently of one another, hydrogen, C_1-C_{20} -alkyl, C_2-C_{20} -alkenyl, C_6-C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the

- alkyl part and 6-20 carbon atoms in the aryl part and two geminal radicals R^{6A} may also be joined to form a five- or six-membered ring,
- A is an unsubstituted, substituted or fused, heteroaromatic 5-membered ring system,
- R^{1B}, R^{2B} are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{20} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or SiR^{3B}_3 , where the organic radicals R^{1B} and R^{2B} may also be substituted by halogens R^{1B} and R^{2B} and/or R^{1B} and A may also be joined to form a five-or six-membered ring,
- R^{3B} are each, independently of one another, hydrogen, C_1 - C_{20} -alkyl C_2 - C_{20} -alkenyl, C_6 - C_{20} -aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals R^{3B} may also be joined to form a five- or six-membered ring,

which comprises the following step:

a'') reaction of an $A-CR^{1B}R^{2B}$ -anion with a cyclopentenone system of the formula (IX)



(IX)